

# Canine Castration

## Orchiectomy:

Castration reduces overpopulation by inhibiting male fertility and decreases male aggressiveness, roaming, and undesirable urination behaviour. It helps prevent androgen-related diseases, including prostatic diseases, perianal adenomas, and perineal hernias. Other indications for castration include congenital abnormalities, testicular or epididymal abnormalities, scrotal neoplasia, trauma or abscesses, inguinalscrotal herniorrhaphy, scrotal urethrostomy, epilepsy control, and control of endocrine abnormalities.

## Castration Age:

The best age to castrate depends on the reason for doing so. If it is a planned procedure, it might well be carried out at 9-12 months of age, if your vet is happy that your dog is physically mature enough. If castration is advised for behavioural reasons, it might not be obvious until 1-2 years of age that there is a need for it. When castration is carried out later in life, the positive changes might not be quite so great, but your dog is never too old to castrate if there is a medical reason for it, like a testicular tumour.

## Dogs with one or both testicles not descended:

During development, the testicles move down from inside the abdomen into the scrotum. Usually both will have descended into the scrotum by the time a puppy is seen for vaccinations at around 2 months of age. If one or both testicles have not descended into the scrotum, this will need to be checked later. If either or both of the testicles stay inside the abdomen, they will be at greater risk of developing cancer in later life, so castration is usually advised. The operation to remove an undescended testicle is a more complicated operation than removal from the scrotum. A dog which has one undescended testicle is called monorchid. If he has two undescended testicles, he is called a cryptorchid.

## Before the operation:

The vet will want to check that the dog is in good general health, is the correct weight and has two fully descended testicles in the scrotum.

Another important way of minimising risks is by taking a blood test before the anaesthetic. This could be done on the day of the operation or a few days earlier. This is used to check

the liver and kidney function (both vital when dealing with anaesthetic drugs) and to rule out any unsuspected illnesses.

#### Before going to the surgery:

Before any anaesthetic the dog should be starved for a number of hours, according to the instructions of the surgery. Having an empty stomach prevents any problems with vomiting which could be dangerous. It is also a good idea to allow the dog enough exercise to empty the bladder and bowels.

#### Before the anaesthetic:

The dog will be weighed to help calculate the dosages of drugs and given a physical examination including checking the heart. If a pre-anaesthetic blood test has not already been done, it can be done now and the results checked before proceeding. If any abnormalities are found, these will be discussed with the owner before deciding whether the operation goes ahead or not. One possible outcome is that extra precautions such as intravenous fluids may be given.

A pre-med, which is usually a combination of several drugs, will be given by injection. This begins to make the dog feel a bit sleepy and ensures that pain relief will be as effective as possible.

#### The anaesthetic:

There are several ways in which this can be given, but the most common is by an injection into the vein of the front leg. The effects of the most commonly used drugs are very fast, but don't last for very long, so a tube is placed into the windpipe to allow anaesthetic gas and oxygen to be given. The anaesthetic gas allows the right level of anaesthesia to be maintained safely for as long as necessary.

Various pieces of equipment will then be connected up to monitor the anaesthetic. This is a skilled job which would usually be carried out by a qualified veterinary nurse. Apart from the operating table, the instruments and the anaesthetic machine, a lot of specialised equipment will be on "stand by" in case it is needed.

The area where the surgical incision is to be made will be prepared by clipping and thorough cleaning to make it as close to sterile as possible. The usual site of the incision for castration is not through the scrotum but just in front of it.

#### Canine Castration:

Either a prescrotal or perineal approach may be used for castration. A prescrotal approach is most common and more easily performed. The testicles are more difficult to exteriorize with a perineal approach, but this may be selected to avoid repositioning and aseptically preparing a second surgical site when the patient is in a perineal position for another

surgical procedure (e.g., perineal hernia repair). Scrotal incisions are sometimes used when castrating prepubertal puppies.

### **Open Prescrotal Castration**

Position the patient in dorsal recumbency. Verify the presence of both testicles in the scrotum. Clip and aseptically prepare the caudal abdomen and medial thighs. Avoid irritating the scrotum with clippers or antiseptics. Drape the surgical area to exclude the scrotum from the field. Apply pressure on the scrotum to advance one testicle as far as possible into the prescrotal area. Incise skin and subcutaneous tissue along the median raphe over the displaced testicle. Continue the incision through spermatic fascia to exteriorize the testicle. Incise the parietal vaginal tunic over the testicle. Do not incise the tunica albuginea because this would expose the testicular parenchyma. Place a haemostat across the vaginal tunic where it attaches to the epididymis. Digitally separate the ligament of the tail of the epididymis from the tunic while applying traction with the haemostat on the tunic. Further exteriorize the testicle by applying caudal and outward traction. Identify the structures of the spermatic cord. Individually ligate the vascular cord and ductus deferens, and then place an encircling ligature around both. Many surgeons ligate the ductus deferens and pampiniform plexus together. Use 2-0 or 3-0 absorbable suture (e.g., polyglactin 910 [Vicryl], polydioxanone [PDS], poliglecaprone 25 [Monocryl], polyglyconate [Maxon], or glycomer 631 [Biosyn]) for ligatures. Alternatively, use haemostatic staples. Place a haemostat across the cord near the testicle. Grasp the ductus deferens with thumb forceps above the ligature, and transect both the ductus deferens and vascular cord between the haemostat and ligatures. Inspect the cord for haemorrhage, and replace the cord within the tunic. Encircle the cremaster muscle and tunic with a ligature. Advance the second testicle into the incision, incise the fascial covering, and remove the testicle as described. Appose the incised dense fascia on either side of the penis with interrupted or continuous sutures. Close subcutaneous tissue with a continuous pattern. Appose skin with an intradermal, subcuticular, or simple interrupted suture pattern.

NOTE • Although the risk of ligature slippage and loosening may be slightly greater with closed than open techniques, removal of the tunics may reduce postoperative swelling.

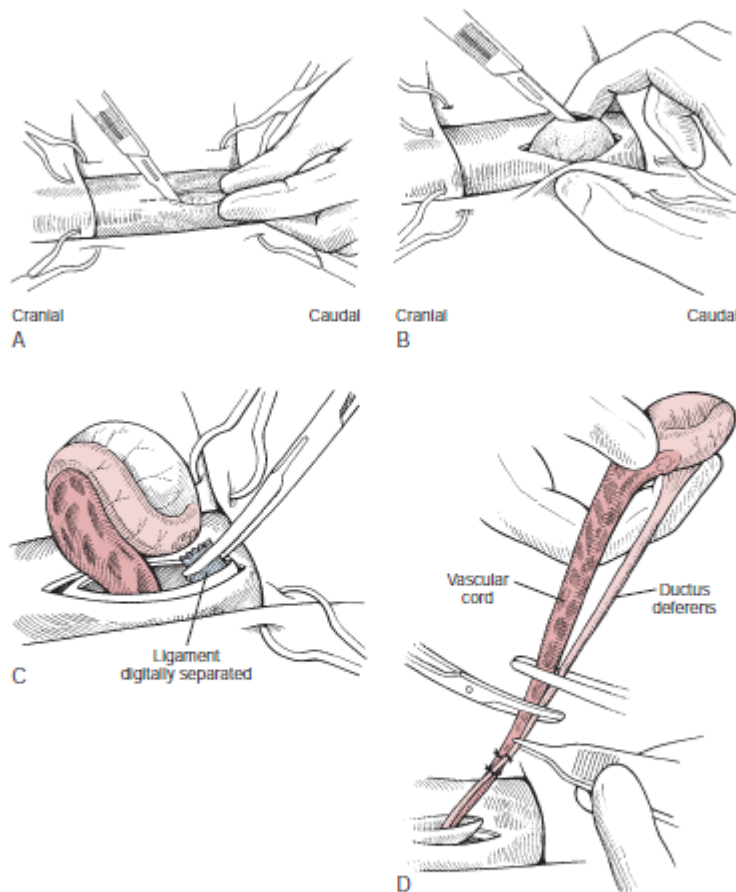
### **Closed Prescrotal Castration**

“Closed” castration is performed similarly to the “open” technique just described, except that the parietal vaginal tunics are not incised. Maximally exteriorize the spermatic cord by reflecting fat and fascia from the parietal tunic with a gauze sponge. Place traction on the testicle while the fibrous attachments between the spermatic cord tunic and scrotum are torn. Place an encircling ligature (e.g., 2-0 or 3-0 absorbable) around the entire spermatic cord and tunics. Pass the needle of a second ligature through the cremaster muscle, or

between structures within the tunic, for a transfixation ligature proximal or distal to the first.

### ✚ Perineal Castration

Perineal castration is performed using the same techniques as for an open prescrotal castration. It is more difficult to displace the testicles into a caudal incision than into a prescrotal incision. An “open” technique must be used. Make a midline skin and subcutaneous tissue incision dorsal to the scrotum in the perineum ventral to the anus. Advance one testicle to the incision, and incise the spermatic fascia and tunic. Exteriorize the testicle, and ligate the spermatic cord as described for an open prescrotal castration.



**FIG 27-7.** **A,** To perform an open canine castration, advance one testicle into the prescrotal area by applying pressure over the scrotum. Make an incision over the testicle. **B,** Incise the spermatic fascia and parietal vaginal tunic. **C,** Place a hemostat across the tunic where it attaches to the epididymis and digitally separate the ligament of the tail of the epididymis from the tunic. **D,** Ligate the ductus deferens and vascular cord individually, and then encircle both with a proximal circumferential ligature. Apply a Carmalt forceps distal to the ligatures and transect between the clamp and ligatures.

### Recovery:

The dog will be placed in a warm kennel with soft bedding and watched closely during recovery. Most dogs will feel very drowsy at first and will take most of the day to sleep off the effects of the anaesthetic. The dog will only be allowed to go home when he is awake enough to stand and walk unaided.

### After-care:

Full instructions should be given by the surgery concerning after-care, including when the dog can be offered food and water. The most important things would be to check the appearance of the wound, to prevent the dog from licking it (with a plastic bucket-collar if necessary) and to limit his exercise by keeping him on the lead. Any concerns of any kind should be raised with the surgery.

The scrotum is not removed during surgery, so it can appear at first as if nothing has been removed, especially if there is a little swelling after the operation. However, the scrotum will gradually shrink as time goes by.

Any medication supplied should be given according to the instructions. Pain relief can be given by tablets or liquid on the food. Antibiotics are not always needed, but may be supplied if there is a need for them.

Usually there will be stitches in the skin which need to be removed after about 10 days, but sometimes these are concealed under the surface and will dissolve by themselves.

The effects of castration can take a few weeks to be seen. If the dog is being castrated to prevent breeding, it is important to realise that he may still be fertile for a while after castration.

If all goes to plan, the dog should feel quite normal within about 1-2 weeks of the operation, or little longer if the testicles were internal.

### Alternative Castration Methods:

Nonsurgical sterilization technique shows promise as safe, effective alternative to castration > <http://veterinarynews.dvm360.com/dvm/article/articleDetail.jsp?id=779728>

Pinhole castration technique: An alternative to orchietomy in stray dogs > [http://www.academia.edu/2628300/Pinhole\\_castration\\_technique\\_An\\_alternative\\_to\\_orchietomy\\_in\\_stray\\_dogs](http://www.academia.edu/2628300/Pinhole_castration_technique_An_alternative_to_orchietomy_in_stray_dogs)

